What is claimed is:

1. Discharge lamp, comprising:

a silica glass discharge vessel having a discharge space, and

a pair of opposed electrodes located in the discharge vessel,

wherein the discharge vessel contains at least 0.15 mg/mm^3 of mercury and a rare gas having argon as a main component, and bromine in an amount in a range of 2×10^{-4} $\mu mole/mm^3$ to 7×10^{-3} $\mu mole/mm^3$,

wherein the amounts of oxygen, hydrogen and carbon which are present in the discharge space of the discharge vessel have been set so as to meet the following conditions (1) to (4) when a direct current of 5 mA is fed between the above described electrodes and a glow discharge produced:

Condition (1): $1.0 \times 10^{-4} \leq \boldsymbol{b/a} \leq 1.2 \times 10^{-1}$

Condition (2): $\boldsymbol{c/a} \leq 1.4 \times 10^{-1}$

Condition (3): $\boldsymbol{d/a} \leq 1.2 \times 10^{-2}$

Condition (4): $\boldsymbol{e/a} \leq 1.4 \times 10^{-2}$

where $\boldsymbol{a}$ is the emission intensity of the argon with a wavelength of 668 nm, $\boldsymbol{b}$ is the emission intensity of OH with a wavelength of 309 nm, $\boldsymbol{c}$ is the emission intensity of hydrogen (H) with a wavelength of 656 nm, $\boldsymbol{d}$ is the emission intensity of C_2 with a wavelength of 517 nm, and $\boldsymbol{e}$ is the emission intensity of the CH with a wavelength of 431 nm.

2. Discharge lamp as claimed in claim 1, wherein the concentration of the carbon compounds within the discharge vessel is less than or equal to 600 ppm.

3. Discharge lamp as claimed in claim 1, wherein the amount of oxygen in the discharge space is in a range from 0.1% by volume to 1% by volume of the amount of argon.

4. Method of producing a discharge lamp comprising the steps of:

providing a silica glass discharge vessel having a discharge space,

locating a pair of opposed electrodes located in the discharge vessel, and

filling the discharge vessel with at least 0.15 mg/mm^3 of mercury and a rare gas having

argon as a main component, and bromine in an amount in a range of 2×10^{-4} µmole/mm^3 to 7×10^{-3} µmole/mm^3,

setting the amounts of oxygen, hydrogen and carbon which are present in the discharge space of the discharge vessel so as to meet the following conditions (1) to (4) when a direct current of 5 mA is fed between the above described electrodes and a glow discharge produced:

Condition (1): $1.0 \times 10^{-4} \leq \boldsymbol{b/a} \leq 1.2 \times 10^{-1}$

Condition (2): $\boldsymbol{c/a} \leq 1.4 \times 10^{-1}$

Condition (3): $\boldsymbol{d/a} \leq 1.2 \times 10^{-2}$

Condition (4): $\boldsymbol{e/a} \leq 1.4 \times 10^{-2}$

where ***a*** is the emission intensity of the argon with a wavelength of 668 nm, ***b*** is the emission intensity of OH with a wavelength of 309 nm, ***c*** is the emission intensity of hydrogen (H) with a wavelength of 656 nm, ***d*** is the emission intensity of C_2 with a wavelength of 517 nm, and ***e*** is the emission intensity of CH with a wavelength of 431 nm.

5. Method according to claim 4, wherein the concentration of the carbon compounds within the discharge vessel is set at less than or equal to 600 ppm.

6. Method as claimed in claim 4, wherein the amount of oxygen in the discharge space is set in a range from 0.1% by volume to 1% by volume of the amount of argon.

7. Method as claimed in claim 4, wherein the electrode material comprising the electrodes has been subjected to heat treatment at a temperature of from 1000 °C to 2300 °C and a treatment pressure of less than or equal to 1×10^{-4} Pa for a treatment time of from 10 minutes to 60 minutes.

8. Method as claimed in claim 4, wherein the material comprising the discharge vessel has been subjected to heat treatment at a temperature of from 1000 °C to 1200 °C and a treatment pressure of less than or equal to 1×10^{-4} Pa for a treatment time of at least 10 hours.